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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/690,942	10/22/2003	Joseph A. Swift	D/A0430D	6185

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EXAMINER

TSOY, ELENA

ART UNIT	PAPER NUMBER
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1762

DATE MAILED: 05/28/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/690,942

Applicant(s)

SWIFT ET AL.

Examiner

Elena Tsoy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 October 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-6 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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Specification

1. The disclosure is objected to because of the following informalities: "3-amino triethoxysilane" on page 7, [0021] is apparently not correct because 3-amino implies at least C₃ alkyl substituent. Appropriate correction is required.

Claim Objections

2. Claim 4 is objected to because of the following informalities: "3-amino triethoxysilane" is apparently not correct because 3-amino implies at least C₃ alkyl substituent. Appropriate correction is required. For examining purposes the phrase was interpreted as well known coupling agent "3-aminopropyl triethoxysilane".

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1, language of step (b) reciting "applying a thin primer layer of a polyfunctional silicone composition applied to said elastomeric layer and hydrolyzed to form a chemical bond between said elastomeric layer and the hydrolyzed silicone composition" renders the claim indefinite because it is not clear how to perform applying of already applied primer layer. Also it is not clear whether the primer layer is hydrolyzed before applying or after. For examining

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purposes step (b) was interpreted according to the specification (See [0021]) as “applying a thin primer layer of a polyfunctional silicone composition to said elastomeric layer and hydrolyzing the silicone composition to form a chemical bond between said elastomeric layer and the hydrolyzed silicone composition”.

Claim 1, language of step (c) and (d) reciting “applying a thin outer layer of a heat-curable elastomer polymer applied to said hydrolyzed silicone primer layer and heat-cured to form a dry outer surface layer bonded to said primer layer, and (d) heat-curing said elastomer polymer at elevated temperatures to form a smooth release surface for said heat fusible toner images” renders the claim indefinite because it is not clear how to perform applying of already applied heat-curable elastomer polymer. Also it is not clear how to perform heat-curing of already heat-cured elastomer polymer. For examining purposes steps (b) and (d) were interpreted as “applying a thin outer layer of a heat-curable elastomer polymer to said hydrolyzed silicone primer layer, and (d) heat-curing said elastomer polymer at elevated temperatures to form dry outer surface layer bonded to said primer layer having a smooth release surface for said heat fusible toner images”.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. **Claims 1-3, 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al (US 5,978,639) in view of Kusano et al (US 5,425,832).

Masuda et al disclose a process for producing a continuous, intermediate transfer belt comprising impregnating a woven fabric with elastomeric rubber 201 (See column 18, lines 45-48; column 29, lines 11-18) such as synthetic rubber including NBR rubber (See column 20, lines 9-25; column 25, lines 55-67), and applying to the rubber layer 201 a surface layer 202 of fluorocarbon resin (See Figs. 3, 4; column 18, lines 59-65) such as polytetrafluoroethylene, tetrafluoroethylene-perfluoroalkylvinylether copolymer, tetrafluoroethylene-hexafluoropropylene-perfluoroalkylvinylether copolymer, tetrafluoroethylene-ethylene copolymer, polychlorotrifluoro-ethylene, chlorotrifluoroethylene-ethylene copolymer, polyvinylidene fluoride, and polyvinyl fluoride (See column 19, lines 38-45; column 24, lines 23-31) to prevent adhesion and fusion of toner (See column 19, lines 45-46); and drying and hardening the surface layer 202 (See column 19, lines 58-60) at elevated temperature (See column 32, lines 47-49).

Masuda et al fail to teach that a primer layer of a polyfunctional silicone composition is applied to the elastomeric rubber layer and hydrolyzed to form a chemical bond between said elastomeric layer and the hydrolyzed silicone composition.

Kusano et al teach that in addition to surface treatment of (a fully cured) fluoropolymer member, aminosilane coupling agents can be used to further enhance the adhesion of a rubber composition, e.g. based on NBR rubber (See column 3, lines 6-7) to the a fluoropolymer member (See column 2, lines 27-33) thereby forming composite materials which are useful for making belts (See column 6, lines 62-65).

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It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a primer layer of aminosilane coupling agent between rubber layer 201 and fluorocarbon layer 202 in Masuda et al with the expectation of providing the desired enhanced adhesion, as taught by Kusano et al.

The Examiner's Note: it is well known in the art that applied aminosilane coupling agent is hydrolyzed to enhance adhesion of joined layers.

7. **Claim 4** is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al (US 5,978,639) in view of Kusano et al (US 5,425,832), further in view of Katayama et al (US 6,602,565).

Masuda et al in view of Kusano et al, as applied above, fail to teach that the aminosilane coupling agent is 3-aminopropyl triethoxysilane.

Katayama et al teach that gamma (3)- aminopropyl triethoxysilane (See column 6, line 8) is a suitable aminosilane coupling agent for enhancing adhesion of a thermoplastic layer to (fully cured) surface-treated fluoropolymer (See column 2, lines 37-45).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used 3-aminopropyl triethoxysilane as aminosilane coupling agent in Masuda et al in view of Kusano et al with the expectation of providing the desired enhanced adhesion since Katayama et al teach that gamma (3)- aminopropyl triethoxysilane is a suitable aminosilane coupling agent for enhancing adhesion of a thermoplastic layer to (fully cured) surface-treated fluoropolymer.

It is held that the selection of a known material based on its suitability for its intended use supported a prima facie obviousness determination in Sinclair & Carroll Co. v. Interchemical

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Corp., 325 U.S. 327, 65 USPQ 297 (1945). See also *In re Leshin*, 227 F.2d 197, 125 USPQ 416 (CCPA 1960) (selection of a known plastic to make a container of a type made of plastics prior to the invention was held to be obvious); *Ryco, Inc. v. Ag-Bag Corp.*, 857 F.2d 1418, 8 USPQ2d 1323 (Fed. Cir. 1988).

8. **Claim 6** is rejected under 35 U.S.C. 103(a) as being unpatentable over Masuda et al (US 5,978,639) in view of Kusano et al (US 5,425,832) further in view of Badesha et al (US 5,695,878).

Masuda et al in view of Kusano et al, as applied above, fail to teach that the fluorocarbon layer is a tetrapolymer of vinylidene fluoride, hexafluoropropylene, tetrafluoroethylene and a cure site monomer.

Badesha et al teach that a tetrapolymer of vinylidene fluoride, hexafluoropropylene, tetrafluoroethylene and a cure site monomer is suitable for making a surface elastomer layer (See column 6, lines 32-39) on toner transfer belt (See column 3, line 8).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to have used a tetrapolymer of vinylidene fluoride, hexafluoropropylene, tetrafluoroethylene and a cure site monomer as a fluorocarbon resin layer in Masuda et al in view of Kusano et al Badesha et al teach that a tetrapolymer of vinylidene fluoride, hexafluoropropylene, tetrafluoroethylene and a cure site monomer is suitable for making a surface elastomer layer on toner transfer belt.

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Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Elena Tsoy whose telephone number is (571) 272-1429. The examiner can normally be reached on Mo-Thur. 9:00-7:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive Beck can be reached on (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Elena Tsoy
Primary Examiner
Art Unit 1762

May 25, 2004